Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-20. (*Canceled*)

- 21. (*Currently Amended*) A system for producing a pulse code modulation (PCM) signal, comprising:
 - a first filter configured to produce an in-phase signal I(n) from a secondary audio program (SAP) signal;
 - a second filter configured to produce a quadrature-phase signal Q(n) from the in-phase signal I(n);
 - a FM demodulator configured to produce a FM demodulated signal substantially equal to Z(n)/X(n), wherein Z(n) and X(n) are functions of I(n) and Q(n), the FM demodulator including a denominator device that estimates a value 1/X(n) based at least in part on a prior estimated value of 1/X(n) and a <u>variable</u> transition speed of X(n); and
 - a third filter configured to produce the PCM signal from the FM demodulated signal.
- 22. (*Previously Presented*) The system of claim 21, wherein Z(n) is substantially equal to $[I(n)Q^{'}(n)-I^{'}(n)Q(n)]$ and X(n) is substantially equal to $[I^{2}(n)+Q^{2}(n)]$.

- 23. (*Original*) The system of claim 21, wherein the SAP signal is a constant magnitude signal, a sine wave, or a cosine wave.
- 24. (Original) The system of claim 21, wherein the first filter is a band pass filter.
- 25. (Original) The system of claim 21, wherein the second filter is a Hilbert filter.
- 26-31. (Canceled)
- 32. (*Previously Presented*) The system of claim 21, wherein the denominator device estimates the value 1/X(n) based at least in part on the prior estimated value of 1/X(n) plus an error value.
- 33. (Previously Presented) The system of claim 32, wherein the error value is substantially equal to [1-X(n)/X(n-1)].
- 34. (*Previously Presented*) The system of claim 33, wherein the error value is scaled by a value of a scaling coefficient before being added to the prior estimated value of 1/X(n).
- 35. (*Previously Presented*) The system of claim 34, wherein the value of the scaling coefficient is based on the transition speed of X(n).

- 36. (New) A system for producing a pulse code modulation (PCM) signal, comprising:
 - a first filter configured to produce an in-phase signal I(n) from a secondary audio program (SAP) signal;
 - a second filter configured to produce a quadrature-phase signal Q(n) from the in-phase signal I(n);
 - a FM demodulator configured to produce a FM demodulated signal substantially equal to Z(n)/X(n), wherein Z(n) and X(n) are functions of I(n) and Q(n), the FM demodulator including a denominator device that estimates a value 1/X(n) based at least in part on a prior estimated value of 1/X(n) and an error value substantially equal to [1-X(n)/X(n-1)]; and
 - a third filter configured to produce the PCM signal from the FM demodulated signal,
 - wherein the error value is scaled by a value of a scaling coefficient based on the transition speed of X(n) before being added to the prior estimated value of 1/X(n).